National Institute of Environmental Health Sciences

Seasonal contamination of public squares and lawns by parasites with zoonotic potential in southern Brazil

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Abstract:

The presence of helminths and protozoans in public squares and lawns of the city of Maringa, southern Brazil, during winter and summer was assessed in order to evaluate their seasonal fluctuations in relation to edaphic and climatic factors. Samples were collected from January 2003 through June 2004 in 90% (13) of all public squares covered by sand, and in 30% (4) of all lawns used as leisure areas. The samples were analysed quantitatively by modified centrifugal-flotation and sedimentation in water techniques, and qualitatively by a method based on positive larval thermo-hydrotropism. Meteorological data were recorded, and physical, chemical and structural characteristics of the soil were analysed. One hundred and thirty samples of sand from squares, 65 in summer and 65 in winter, and 40 samples of grass from lawns, 20 in each season, were collected. All samples from lawns, 62 (95.38%) from squares in winter and 45 (69.23%) in summer, contained protozoans and/or helminths. Eggs of Toxocara spp. were the most frequently observed parasites in both winter and summer in squares (P < 0.0001) and in lawns (P Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.6142), being equally distributed among the different locations (P Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.2038). Species diversity was lower in winter; fewer parasites were found in summer. This region, with a tropical climate and a mild winter dry season, has favourable edaphic and climatic conditions for soil contaminants to persist year-round. In addition, the high frequency of animals such as dogs and cats and the poor sanitary measures in force made it possible for zoonoses to be transmitted in the public spaces.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Tropical

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Central/South America

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease, Zoonotic Disease

Foodborne/Waterborne Disease: Helminthiases

Zoonotic Disease: General Zoonotic Disease

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified